

Date prepared: 4/01

**Name**

Scott Prahl, Ph.D. Assistant Professor

**Education**

California Institute of Technology	1982	B.S.	Applied Physics
University of Texas at Austin	1988	Ph.D.	Biomedical Engineering

**Professional Experience**

1988 - 1989	Research fellow, Academic Medical Center, Amsterdam
1990 - 1991	Research fellow, Massachusetts General Hospital, Boston
1991 - 1993	Instructor, Harvard Medical School, Boston
1993 - Present	Senior Research Scientist, Oregon Medical Laser Center, Portland
1993 - Present	Assistant Professor, Oregon Graduate Institute, Portland
1993 - Present	Research Assistant Professor, Oregon Health Sciences University, Portland

**Awards and Other Professional Activities**

1991	Dermatology Foundation Award
1995 - Present	Editorial Board, Lasers in Medicine and Surgery
1995 - Present	Physics Chairman, Oregon Academy of Science
2001	Distinguished Teaching Award - Oregon Graduate Institute

**EXHIBIT**

A

**Refereed Papers**

- [1] P. A. Patel, J. W. Valvano, J. A. Pearce, S. A. Prahl, and C. R. Denham. A self-heated thermistor technique to measure effective thermal properties from the tissue surface. *J. Biomechanical Engineering*, 109:330–335, 1987.
- [2] S. L. Jacques, C. A. Alter, and S. A. Prahl. Angular dependence of HeNe laser light scattering by human dermis. *Lasers Life Sci.*, 1:309–333, 1987.
- [3] S. L. Jacques and S. A. Prahl. Modeling optical and thermal distributions in tissue during laser irradiation. *Lasers Surg. Med.*, 6:494–503, 1987.
- [4] G. Yoon, S. A. Prahl, and A. J. Welch. Accuracies of the diffusion approximation and its similarity relations for laser irradiated biological media. *Appl. Opt.*, 28:2250–2255, 1989.
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- [6] C. J. M. Moes, M. J. C. van Gemert, W. M. Star, J. P. A. Marijnissen, and S. A. Prahl. Measurements and calculations of the energy fluence rate in a scattering and absorbing phantom at 633 nm. *Appl. Opt.*, 28:2292–2296, 1989.
- [7] M. R. Prince, G. M. LaMuraglia, C. E. Seidlitz, S. A. Prahl, C. A. Athanassoulis, and R. Birngruber. Ball-tipped fibers for laser angioplasty with the pulsed-dye laser. *IEEE J. Quantum Electron.*, 26:2297–2304, 1990.
- [8] W. F. Cheong, S. A. Prahl, and A. J. Welch. A review of the optical properties of biological tissues. *IEEE J. Quantum Electron.*, 26:2166–2185, 1990.
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- [10] H. J. van Staveren, C. J. M. Moes, J. van Marle, S. A. Prahl, and M. J. C. van Gemert. Light scattering in Intralipid-10% in the wavelength range of 400–1100 nm. *Appl. Opt.*, 31:4507–4514, 1991.
- [11] J. W. Pickering, C. J. M. Moes, H. J. C. M. Sterenborg, S. A. Prahl, and M. J. C. van Gemert. Two integrating sphere with an intervening scattering sample. *J. Opt. Soc. Am. A*, 9:621–631, 1992.
- [12] S. A. Prahl, I. A. Vitkin, U. Bruggemann, B. C. Wilson, and R. R. Anderson. Determination of optical properties of turbid media using pulsed photothermal radiometry. *Phys. Med. Biol.*, 37:1203–1217, 1992.
- [13] J. W. Pickering, S. A. Prahl, N. van Wieringen, J. F. Beek, H. J. C. M. Sterenborg, and M. J. C. van Gemert. Double-integrating-sphere system for measuring the optical properties of tissue. *Appl. Opt.*, 32:399–410, 1993.

- [14] S. A. Prahl, M. J. C. van Gemert, and A. J. Welch. Determining the optical properties of turbid media by using the adding-doubling method. *Appl. Opt.*, 32:559–568, 1993.
- [15] I. A. Vitkin, B. C. Wilson, R. R. Anderson, and S. A. Prahl. Pulsed photothermal radiometry in optically transparent media containing discrete optical absorbers. *Phys. Med. Biol.*, 39:1721–1744, 1994.
- [16] D. D. Royston, R. S. Poston, and S. A. Prahl. Optical properties of scattering and absorbing materials used in the development of optical phantoms at 1064 nm. *J. Biomedical Optics*, 1:110–116, 1996.
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- [18] H. Shangguan, L. W. Casperson, A. Shearin, K. W. Gregory, and S. A. Prahl. Drug delivery with microsecond laser pulses into gelatin. *Appl. Opt.*, 35:3347–3357, 1996.
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- [22] H. Shangguan, L. W. Casperson, and S. A. Prahl. Pressure impulses during microsecond laser ablation. *Appl. Opt.*, 36:9034–9041, 1997.
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- [31] G. Paltauf, J. A. Viator, S. A. Prahl, and S. L. Jacques. Iterative reconstruction method for three-dimensional optoacoustic imaging. *Journal of Acoustic Society of America*, 112:1536-1544, 2002.
- [32] Ronald F. Wolf, Hua Xie, John Petty, Jeff S. Teach, and Scott A. Prahl. Argon ion beam hemostasis with albumin following liver resection. *Am. J. Surg.*, 183:584-587, 2002.
- [33] H. Xie, B. S. Shaffer, S. A. Prahl, and K. W. Gregory. Intraluminal albumin stent assisted laser welding for ureteral anastomosis. *Laser Surg. Med.*, 31:225-229, 2002.
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**Patents**

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- [3] S. A. Prahl and S. L. Jacques. Multiple diameter fiber optic device and process of using the same. *United States Patent. No. 6,014,204*, 1998.
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- [4] M. J. C. van Gemert, S. A. Prahl, and A. J. Welch. Lichtausbreitung und Streuung in trüben Medien. In G. Müller and H. P. Berlien, editors, *Ange wandte Lasermedizin: Lehr- und Handbuch für Praxis und Klinik*, chapter II-3.1.2, pages 1-10. ecomed verlagsgesellschaft mbH, München, 1989.

### Supervised Theses

- [1] J. A. Viator. *Characterization of photoacoustic sources in tissue using time domain measurements*. PhD thesis, Oregon Graduate Institute of Science and Technology, 2001.
- [2] H. Shangquan. *Local Drug Delivery with Microsecond Laser Pulses: In vitro Studies*. PhD thesis, Portland State University, 1996.
- [3] K. S. Kumar. *Spectroscopy of indocyanine green photodegradation*. Master's thesis, Oregon Graduate Institute of Science and Technology, 1996.
- [4] U. S. Sathyan. *Laser Thrombolysis: Basic Ablation Studies*. PhD thesis, Oregon Graduate Institute of Science and Technology, 1996.
- [5] S. Pearson. *Mechanical strength studies of steady-state thermal and pulsed laser tissue welding*. Master's thesis, Oregon Graduate Institute of Science and Technology, 1996.
- [6] S. D. Robinson. *Measurement of 8-methoxypsoralen concentration using fluorescence*. Master's thesis, Oregon Graduate Institute of Science and Technology, 1995.
- [7] E. N. La Joie. *Tissue welding: Studies of pulsed diode laser interaction with ICG stained porcine aorta and elastin-based biomaterial*. Master's thesis, Oregon Graduate Institute of Science and Technology, 1995.
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### Conference Proceedings

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- [3] J. W. Valvano, S. A. Pahl, J. C. Chan, and J. A. Pearce. Thermal camera imaging to measure tissue blood flow. In *Sixth Southern Biomedical Engineering Conference*, Dallas, TX, 1987.
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- [8] S. L. Jacques, L. Buckley, S. Pahl, and K. Gregory. Quantifying psoralen in tissues by fluorescence: Dosimetry for psoralen administration followed by ultraviolet A irradiation (PUVA) to block restenosis. In G. S. Abela, editor, *SPIE Proceedings of Diagnostic and Therapeutic Cardiovascular Interventions IV*, volume 2130, pages 82-88, 1994.
- [9] E. N. La Joie, A. D. Barofsky, K. W. Gregory, and S. A. Pahl. Welding artificial biomaterial with a pulsed diode laser and indocyanine green. In R. R. Anderson, editor, *SPIE Proceedings of Lasers in Surgery: Advanced Characterization, Therapeutics, and Systems V*, volume 2395, pages 508-516, 1995.
- [10] H. Shangguan, L. W. Casperson, A. Shearin, K. W. Gregory, and S. A. Pahl. Photoacoustic drug delivery: the effect of laser parameters on spatial distribution of delivered drug. In S. L. Jacques, editor, *SPIE Proceedings of Laser-Tissue Interaction VI*, volume 2391, pages 394-402, 1995.

- [11] U. S. Sathyam, A. Shearin, and S. A. Prahl. The effect of spotsize, pulse energy, and repetition rate on microsecond ablation of gelatin under water. In S. L. Jacques, editor, *SPIE Proceedings of Laser-Tissue Interaction VI*, volume 2391, pages 336–344, 1995.
- [12] S. A. Prahl. Charts for rapid estimation of spatial and temporal distribution of temperature following laser irradiation. In S. L. Jacques, editor, *SPIE Proceedings of Laser-Tissue Interaction VI*, volume 2391, pages 499–511, 1995.
- [13] H. Shangguan, L. W. Casperson, A. Shearin, and S. A. Prahl. Investigation of cavitation bubble dynamics using particle image velocimetry: implications for photoacoustic drug delivery. In R. R. Anderson and A. Katzir, editors, *SPIE Proceedings of Lasers in Surgery: Advanced Characterization, Therapeutics, and Systems VI*, volume 2671, pages 104–115, 1996.
- [14] U. S. Sathyam, A. Shearin, and S. A. Prahl. Visualization of microsecond laser ablation of porcine clot and gelatin under a clear liquid. In R. R. Anderson and A. Katzir, editors, *SPIE Proceedings of Lasers in Surgery: Advanced Characterization, Therapeutics, and Systems VI*, volume 2671, pages 28–35, 1996.
- [15] E. J. Chapyak, R. P. Godwin, S. A. Prahl, and H. Shangguan. Comparison of numerical simulations and laboratory studies of laser thrombolysis. In R. R. Anderson, K. E. Bartels, L. S. Bass, K. W. Gregory, D. M. Harris, H. Lui, R. S. Malek, G. J. Mueller, M. M. Pankratov, A. P. Perlmutter, H. Reidenbach, L. P. Tate, and G. M. Watson, editors, *SPIE Proceedings of Lasers in Surgery: Advanced Characterization, Therapeutics, and Systems VII*, volume 2970, pages 28–34, 1997.
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- [23] M.-A. Descalle, S. L. Jacques, S. A. Prahl, T. L. Laing, and W. R. Martin. Measurements of ligament and cartilage optical properties at 351 nm, 365 nm, and in the visible range (440 to 800 nm). In Guy P. Delacretaz, Lars O. Svaasand, Rudolf W. Steiner, Roberto Pini, and Guilhem Godlewski, editors, *SPIE Proceedings of Laser-Tissue Interaction, Tissue Optics, and Laser Welding III*, volume 3195, pages 280–286, 1998.
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